

METHODS FOR IN SITU GENERATION OF NUCLEIC ACID ARRAYS**ABSTRACT OF THE DISCLOSURE**

- 5 Methods of producing nucleic acid arrays using an *in situ* nucleic acid synthesis protocol are provided, where the *in situ* nucleic acid synthesis protocol includes a plurality of cycles, each of which includes: (I) a monomer attachment step; and (II) a functional group generation step, the latter of which may include: (a) oxidation and (b) deblocking substeps, and optionally a capping substep. A
- 10 feature of the subject methods is that, following deblock of the surface, the deblocking fluid is displaced from the surface using a lower density wash fluid. Also provided are the arrays produced using the subject methods, as well as methods for use of the arrays and kits that include the same.